REMARKS

This amendment responds to the office action mailed February 6, 2004. In the office action the Examiner:

- rejected claims 10-16 under 35 U.S.C. 102(e) as anticipated by or in the alternative, under 35 U.S.C. 103(a) as obvious over Ichikawa (U.S. Pat. No. 5,917,836) considered with Kawamura (U.S. Pat. No. 6,151,441);
- rejected claim 17 under 35 U.S.C. 103(a) as unpatentable over Ichikawa considered with Kawamura and further considered with Nakamura (U.S. Pat. No. 5,684,810);
- rejected claims 1-6, 8, 18 and 19 under 35 U.S.C. 103(a) as being unpatentable over Ichikawa considered with Kawamura and further considered with LoGalbo (U.S. Pat. No. 6,128,763);
- rejected claims 7, 9 and 20 under 35 U.S.C. 103(a) as being unpatentable over Ichikawa considered with Kawamura and further considered with LoGalbo and further in view of Nakamura and Maeda (U.S. Pat. 4,554,652).

After entry of this amendment, the pending claims are: claims 1-6, 8, 10-16, 18-19 and 21-29. Claims 7, 9, 17 and 20 were canceled.

Specification Amendment

With this amendment, Applicant has amended paragraphs 0034, 0035 and 0044 to correct various typographical errors in the specification. No new subject matter is added.

Claim Amendments

Claim 10, as amended, recites a method of providing information on error rates occurring in an optical compact disk unit used for reading data from an optical disk media. The method first reads a stream of multiplexed error flag signals and then converts the stream of multiplexed error flag signals into a stream of demultiplexed error flag signals. The demultiplexed error flag signals are detected for the occurrence of at least one error type over a predetermined time period, which is defined as an error rate for the error type. The error rate is then compared with a predetermined threshold rate value and distinct remedial actions are initiated in response to different comparison results.

None of the cited references teach the step of demultiplexing a stream of error flag signals prior to detecting error codes in the stream of error flag signals. For instance, Fig. 1 of Ichikawa teaches that a demodulated signal from the pickup 3 is input to an error correction code (ECC) circuit 8 via a sector detection circuit 7, in which error detection and

corrections are carried out. There is no indication that the error flag signals have been demultiplexed before reaching the ECC circuit 8.

Contrary to the present application, a multiplexed data separation circuit 13 in Fig. 1 of Ichikawa is clearly positioned ***after*** the ECC circuit 8 has completed error detection and correction, which further confirms that the input to the ECC circuit 8 is not a stream of demultiplexed data, but a stream of multiplexed data. A similar configuration can be found in Fig. 1 of Kawamura: the demultiplexer circuit 5 is positioned next to the ring buffer circuit 4, which is subsequently next to the error correct circuit 3.

Note that it is well understood by one skilled in the art that the term "modulate" (and thereby "demodulate") is different from the term "multiplex" (and thereby "demultiplex"). The former is commonly referred to as an **analog** operation that varies the amplitude, frequency or phase of a wave by impressing one wave on another wave of constant properties, while the latter is commonly known as a **digital** operation which combines multiple signals for transmission over a single channel.

For the reasons stated above, none of the cited references, either alone or in combination, satisfies the "demultiplexing" requirement in amended claim 10. For this reason, claim 10 and its dependent claims are patentable over the prior art of record.

Furthermore, none of the cited references teach that two remedial actions are initiated in response to different comparison results so as to reduce future data reading errors. For instance, if the error rate is nonzero, does not exceed the threshold value, the claimed method may respond by reducing the optical disk media's rotation speed so that there is more time available for reading a single data bit from the optical disk. As a result, the probability of data misreading in the future is significantly lowered.

In contrast, what is taught by Nakamura is how and when different error correction schemes are invoked, predicated upon various threshold values. A characteristic shared by all the schemes taught by the cited references is that they attempt to correct **past** errors already existing in the data that have been read into a memory. These reference do not teach the use of remedial actions to prevent **future** errors from happening in the first place, nor do they teach the selection of a remedial action based on whether an error rate exceeds a threshold. Since claim 10 requires a selection of remedial actions based on a comparison of an error rate with a threshold, and this is not taught in any of the prior art references of record, claim 10 is patentable over the prior art of record.

In summary, claim 10 and its dependent claims 11-16 and 25-26 are neither anticipated by nor unpatentable over the cited references.

Claims 1, 8 and 18 are respective error rate counting system claims that include limitations substantially similar to the two limitations (demultiplexing and remedial action selection) discussed above with respect to claim 10.

It is noted that LoGalbo does not teach or suggest a demultiplexer for receiving a stream of multiplexed error signals and outputting a stream of demultiplexed error signals that is positioned before an error detector. Actually, there is no occurrence of the term "demultiplex" or its equivalents in LoGalbo at all. Nor does LoGalbo teach or suggest remedial actions to prevent future data reading errors as recited in claims 1, 8 or 18. Therefore, claims 1, 8 and 18 and their respective dependent claims 2-6, 21-22, 23-24, 19 and 27-29 are also patentable over Lo Balbo in combination with the other references cited by the Examiner.

In light of the above amendments and remarks, the Applicant respectfully requests that the Examiner reconsider this application with a view towards allowance. The Examiner is invited to call the undersigned attorney at (650) 849-7721, if a telephone call could help resolve any remaining items.

Respectfully submitted,

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